US Provisional Application 60/040,269, filed March 5, 1997, and the PCT application, PCT/US98/04258, of which this is a filing under 35 U.S.C. 371, filed March 4, 1998. Therefore, this amendment contains no new matter. The amended version of the table also incorporates SEQ ID NO: identifiers for the primer sequences. A copy of Table 1 as filed in the priority application is enclosed for the convenience of the Examiner. This copy also has the positions where line breaks were entered at the primer names, as compared to the amended version and the "VERSION WITH MARKINGS TO SHOW CHANGES MADE" attached hereto.

Applicants request entry of this amendment in adherence with 37 C.F.R. §§1.821 to 1.825. This amendment is accompanied by a floppy disk containing the above named sequences, SEQ ID NOS: 1-28, in computer readable form, and a paper copy of the sequence information which has been printed from the floppy disk.

The information contained in the computer readable disk was prepared through the use of the software program "PatentIn" and is identical to that of the paper copy. This amendment contains no new matter.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

Paragraph beginning at line 1 of page 1 has been amended as follows:

CROSS-REFERENCE TO RELATED APPLICATION

This application claims priority to U.S. Provisional Patent Application Serial No. 60/040,269, filed March 5, 1997.

Paragraph beginning at line 4 of page 3 has been amended as follows:

Figure 2 shows the detection of frameshift and nonsense mutations. (**A**) Analysis of exon 2 in a MEN1 patient and a normal control, using dideoxy fingerprinting (ddF) to reveal pattern differences (arrows) indicative of a possible mutation. (**B**) Abnormal ddF pattern in exon 9 from a different patient. (**C**) Identification of a single nucleotide deletion by sequencing of a cloned exon 2 PCR product from the patient whose ddF pattern is shown in (A). The sequence shown (SEQ ID NO:4) is of the antisense strand; the mutation is 512delC (normal = SEQ ID NO:5). This frameshift mutation was confirmed by detecting the presence of a new *AflII* site in PCR-amplified exon 2 from this patient and two affected relatives (**D**). (**E**) Direct sequencing of the exon 9 PCR product from panel (B), revealing the presence of a heterozygous C to T (C => T) substitution (SEQ ID NOS:6 and 7). Again the sequence is of the antisense strand; the mutation creates a stop codon: TGG to TAG or W436X (TGG => TAG or W436X).

Paragraph beginning at line 3 of page 18 has been amended as follows:

In summary, the menin gene can identified and prepared by probing or amplifying select regions of a biological sample, such as a mixed cDNA or genomic pool, using the probes and primers generated from the *MEN1* sequences; exemplary probes are provided herein in Table 1 (sequence numbering based on SEQ ID NO:3 ~~SEQ ID NO:1~~):

Table 1

Exons	Primary PCR primers	Product size(bp)	ddF primers
Exon 2 from ATG	MEN2A(1932-1953) (SEQ ID NO:8) gacctgggtgcgctttctggac MEN2B(2946-2968) (SEQ ID NO:9) gaggtgaggttgatgatttggag	1039	MEN2C(2451-2473) (SEQ ID NO:10) ggtgagctcgggaacgttggtag MEN2D(2629-2652) (SEQ ID NO:11) gagaccttcttcaccagctcacgg MEN2E(2810-2833) (SEQ ID NO:12) cgaacctcacaaggcttacagttc
Exon 3	MEN3A(4096-4119) (SEQ ID NO:13) gttggacatagagggtgtaaacag MEN3B(5497-5520) (SEQ ID NO:14) acagttgacacaaagtgagactgg	1427	MEN3C(4613-4637) (SEQ ID NO:15) ggctcttctgtcttcccttcctatg
Exon 4	MEN3A(4096-4119) (SEQ ID NO:13) gttggacatagagggtgtaaacag MEN3B(5497-5520) (SEQ ID NO:14) acagttgacacaaagtgagactgg	1427	MEN4C(4881-4904) (SEQ ID NO:16) ggtcccacagcaagtcaagtctgg
Exon 5	MEN3A(4096-4119) (SEQ ID NO:13) gttggacatagagggtgtaaacag MEN3B(5497-5520) (SEQ ID NO:14) acagttgacacaaagtgagactgg	1427	MEN5C(5138-5161) (SEQ ID NO:17) cctgttccgtggctcataactctc
Exon 6	MEN3A(4096-4119) (SEQ ID NO:13) gttggacatagagggtgtaaacag MEN3B(5497-5520) (SEQ ID NO:14) acagttgacacaaagtgagactgg	1427	MEN5C(5138-5161) (SEQ ID NO:17) cctgttccgtggctcataactctc
Exon 7	MEN7A(5828-5849) (SEQ ID NO:18) cctcagccagcagtcctgtaga MEN7B(6212-6233) (SEQ ID NO:19) ggacgagggtggttggaaactg	408	MEN7C(5911-5933) (SEQ ID NO:20) ggactccttgggatcttcctgtg
Exon 8	MEN8A(6404-6425) (SEQ ID NO:21) aacgaccatcatccagcagtgg MEN8B(6834-6855) (SEQ ID NO:22) ccatccctaatcccgtacatgc	454	MEN8C(6577-6600) (SEQ ID NO:23) tggtgagacccccttcagaccctac
Exon 9	MEN9A(7142-7164) (SEQ ID NO:24) ctgctaaggggtgagtaagagac MEN9B(8190-8212) (SEQ ID NO:25) ggtttgatacagactgtactcgg	1073	MEN9C(7404-7426) (SEQ ID NO:26) gtctgacaagcccgtggctgctg
Exon 10 to stop	MEN9A(7142-7164) (SEQ ID NO:24) ctgctaaggggtgagtaagagac MEN9B(8190-8212) (SEQ ID NO:25) ggtttgatacagactgtactcgg	1073	MEN10C(7445-7467) (SEQ ID NO:27) gcatctgcccatccccttcggtg MEN10D(7775-7797) (SEQ ID NO:28) gaagcctcctgggactgtcgctg

Table 1

Exons	Primary PCR primers	Product size(bp)	ddF primers
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Exon 7	MEN7A(5828-5849) cctcagccagcagtcctgtaga/MEN7B (6212-6233) ggacgagggtggttggaaactg	408	MEN7C(5911-5933) ggactccttgggatcttcctgtg
Exon 8	MEN8A(6404-6425) aacgaccatcatccagcagtgg/MEN8B (6834-6855) ccatccctaatcccgtacatgc	454	MEN8C(6577-6600) tggtgagacccccttcagaccctac
Exon 9	MEN9A(7142-7164) ctgctaaggggtgagtaagagag/MEN9 B(8190-8212) ggtttgatacagactgtactcgg	1073	MEN9C(7404-7426) gtctgacaagcccgtggctgctg
Exon 10 to stop	MEN9A(7142-7164) ctgctaaggggtgagtaagagag/MEN9 B(8190-8212) ggtttgatacagactgtactcgg	1073	MEN10C(7445-7467) gcatctgcccatccccttcggtg/MEN10D (7775-7797) gaagcctcctgggactgtcgctg